



APPROVED

for  
PTO DEPOSIT ACCOUNT CHARGE  
ACCOUNT #04-1700

EL988725766US

Deposited on:

11/17/2003

DUNLAP, CODDING &amp; ROGERS, P.C.

PTO/SB/21 (08-00)  
Approved for use through 10/31/2002. OMB 0651-0031  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE**TRANSMITTAL  
FORM**

(to be used for all correspondence after initial filing)

|                        |                          |
|------------------------|--------------------------|
| Application Number     | 09/988,847               |
| Filing Date            | 11/19/2001               |
| First Named Inventor   | Daniel E. Resasco et al. |
| Group Art Unit         | 1754 (Conf. No. 9377)    |
| Examiner Name          | S. Hendrickson           |
| Attorney Docket Number | 5820.615                 |

Total Number of Pages in This Submission

**ENCLOSURES (check all that apply)**

- |  |   |   |
|--|---|---|
| <input checked="" type="checkbox"/> Fee Transmittal Form<br><input type="checkbox"/> Fee Attached<br><input type="checkbox"/> Amendment / Reply<br><input type="checkbox"/> After Final<br><input type="checkbox"/> Affidavits/declaration(s)<br><input type="checkbox"/> Extension of Time Request<br><input type="checkbox"/> Express Abandonment Request<br><input checked="" type="checkbox"/> Information Disclosure Statement<br><input type="checkbox"/> Certified Copy of Priority Document(s)<br><input type="checkbox"/> Response to Missing Parts/<br>Incomplete Application<br><input type="checkbox"/> Response to Missing Parts<br>under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Assignment Papers<br>(for an Application)<br><input type="checkbox"/> Drawing(s)<br><input type="checkbox"/> Licensing-related Papers<br><input type="checkbox"/> Petition<br><input type="checkbox"/> Petition to Convert to a<br>Provisional Application<br><input type="checkbox"/> Power of Attorney, Revocation<br>Change of Correspondence<br>Address<br><input type="checkbox"/> Terminal Disclaimer<br><input type="checkbox"/> Request for Refund<br><input type="checkbox"/> CD, Number of CD(s) _____ | <input type="checkbox"/> After Allowance Communication<br>to Group<br><input type="checkbox"/> Appeal Communication to Board<br>of Appeals and Interferences<br><input type="checkbox"/> Appeal Communication to Group<br>(Appeal Notice, Brief, Reply Brief)<br><input type="checkbox"/> Proprietary Information<br><input type="checkbox"/> Status Letter<br><input checked="" type="checkbox"/> Other Enclosure(s) (please<br>identify below):<br><br>See remarks below: |
|--|---|---|

**Remarks**

1. Transmittal (1 page);
2. Fee Transmittal (1 page) Authorizing the Commissioner to charge indicated fees of \$180.00 (which includes \$180.00 for Submission of IDS) and any additional fee required and/or credit any overpayments to Deposit Account Dunlap, Coddling & Rogers, P.C.;
3. Supplemental Information Disclosure Statement (3 pages);
4. Supplemental Form PTO-1449 (2 pages);
5. Copies of cited material; and
6. Return Receipt Postcard

**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT**

|                               |   |
|-------------------------------|---|
| Firm<br>or<br>Individual name | DUNLAP, CODDING & ROGERS, P.C., Customer Number 30589<br>P. O. Box 16370, Oklahoma City, Oklahoma 73113; Christopher W. Corbett |
| Signature                     |   |
| Date                          | 11/17/03  |

**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail or U.S. Express mail no. EL988725766US in an envelope addressed to the address below on this date: 11/17/2003

|                       |   |
|-----------------------|---|
| Typed or printed name | Christopher W. Corbett, Reg. No. 36,109 |
| Signature             |   |

Date 11/17/03

SEND TO: Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

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for

Express Mail No.: EL988725766US  
Date Deposited: 11/17/2003PTO DEPOSIT ACCOUNT CHARGE  
ACCOUNT# 04-1700

PTO/SB/17 (10-02)

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

DUNLAP CODDING &amp; ROGERS, P.C.

## FEE TRANSMITTAL

NOV 17 2003

for FY 2003

Patent fees are subject to annual revision.

Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT

(\$ 180)

## Complete if Known

|                      |                          |
|----------------------|--------------------------|
| Application Number   | 09/988,847               |
| Filing Date          | 11/19/2001               |
| First Named Inventor | Daniel E. Resasco et al. |
| Examiner Name        | S. Hendrickson           |
| Art Unit             | 1754                     |
| Attorney Docket No.  | 5820.615                 |

## METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit card ☐ Money Order ☐ None
☒ Deposit Account:Deposit  
Account  
Number  
Deposit  
Account  
Name

04-1700

Dunlap, Coddling & Rogers, P.C.  
Customer No. 30589

The Commissioner is authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☒ Credit any overpayments☒ Charge any additional fee(s) during the pendency of this application☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

## FEE CALCULATION

## 1. BASIC FILING FEE

| Large Entity |          | Small Entity |          | Fee Description        | Fee Paid |
|--------------|----------|--------------|----------|------------------------|----------|
| Fee Code     | Fee (\$) | Fee Code     | Fee (\$) |                        |          |
| 1001         | 770      | 2001         | 385      | Utility filing fee     |          |
| 1002         | 340      | 2002         | 170      | Design filing fee      |          |
| 1003         | 530      | 2003         | 265      | Plant filing fee       |          |
| 1004         | 770      | 2004         | 385      | Reissue filing fee     |          |
| 1005         | 160      | 2005         | 80       | Provisional filing fee |          |

SUBTOTAL (1) (\$ 0)

## 2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

| Total Claims       |  | Extra Claims |  | Fee from below |  | Fee Paid |     |
|--------------------|--|--------------|--|----------------|--|----------|-----|
| Independent Claims |  | ** =         |  | X              |  | =        | \$0 |
| Multiple Dependent |  | ** =         |  | X              |  | =        | \$0 |

| Large Entity |          | Small Entity |          | Fee Description  | Fee Paid |
|--------------|----------|--------------|----------|--|----------|
| Fee Code     | Fee (\$) | Fee Code     | Fee (\$) |  |          |
| 1202         | 18       | 2202         | 9        | Claims in excess of 20                                     |          |
| 1201         | 86       | 2201         | 43       | Independent claims in excess of 3                          |          |
| 1203         | 290      | 2203         | 145      | Multiple dependent claim, if not paid                      |          |
| 1204         | 86       | 2204         | 43       | ** Reissue independent claims over original patent         |          |
| 1205         | 18       | 2205         | 9        | ** Reissue claims in excess of 20 and over original patent |          |

SUBTOTAL (2) (\$ 0)

\*\*or number previously paid, if greater; For Reissues, see above

## FEE CALCULATION (continued)

## 3. ADDITIONAL FEES

Large Entity Small Entity

| Fee Code | Fee (\$) | Fee Code | Fee (\$) | Fee Description  | Fee Paid |
|----------|----------|----------|----------|--|----------|
| 1051     | 130      | 2051     | 65       | Surcharge - late filing fee or oath  |          |
| 1052     | 50       | 2052     | 25       | Surcharge - late provisional filing fee or cover sheet                     |          |
| 1053     | 130      | 1053     | 130      | Non-English specification  |          |
| 1812     | 2,520    | 1812     | 2,520    | For filing a request for ex parte reexamination                            |          |
| 1804     | 920*     | 1804     | 920*     | Requesting publication of SIR prior to Examiner action                     |          |
| 1805     | 1,840*   | 1805     | 1,840*   | Requesting publication of SIR after Examiner action                        |          |
| 1251     | 110      | 2251     | 55       | Extension for reply within first month                                     |          |
| 1252     | 420      | 2252     | 210      | Extension for reply within second month                                    |          |
| 1253     | 950      | 2253     | 475      | Extension for reply within third month                                     |          |
| 1254     | 1,480    | 2254     | 740      | Extension for reply within fourth month                                    |          |
| 1255     | 2,010    | 2255     | 1,005    | Extension for reply within fifth month                                     |          |
| 1401     | 330      | 2401     | 165      | Notice of Appeal   |          |
| 1402     | 330      | 2402     | 165      | Filing a brief in support of an appeal                                     |          |
| 1403     | 290      | 2403     | 145      | Request for oral hearing   |          |
| 1451     | 1,510    | 1451     | 1,510    | Petition to institute a public use proceeding                              |          |
| 1452     | 110      | 2452     | 55       | Petition to revive - unavoidable   |          |
| 1453     | 1,330    | 2453     | 665      | Petition to revive - unintentional   |          |
| 1501     | 1,330    | 2501     | 665      | Utility issue fee (or reissue)   |          |
| 1502     | 480      | 2502     | 240      | Design issue fee   |          |
| 1503     | 640      | 2503     | 320      | Plant issue fee  |          |
| 1460     | 130      | 1460     | 130      | Petitions to the Commissioner  |          |
| 1807     | 50       | 1807     | 50       | Processing fee under 37 CFR 1.17(q)  |          |
| 1806     | 180      | 1806     | 180      | Submission of Information Disclosure Stmt                                  | 180      |
| 8021     | 40       | 8021     | 40       | Recording each patent assignment per property (times number of properties) |          |
| 1809     | 770      | 2809     | 385      | Filing a submission after final rejection (37 CFR 1.129(a))                |          |
| 1810     | 770      | 2810     | 385      | For each additional invention to be examined (37 CFR 1.129(b))             |          |
| 1801     | 770      | 2801     | 385      | Request for Continued Examination (RCE)                                    |          |
| 1802     | 900      | 1802     | 900      | Request for expedited examination of a design application                  |          |

Other fee (specify)

\*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ 180)

## SUBMITTED BY

(Complete if applicable)

Name (Print/Type)

Christopher W. Corbett

Registration No.  
(Attorney/Agent)

36,109

Telephone (405) 607-8600

Signature

Date

11/17/2003

SEND TO:

Commissioner for Patents  
PO Box 1450, Alexandria, VA 22313-1450

**EXPRESS MAIL NO.: EL988725766US**  
**Deposited On: November 17, 2003**



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**Application No. : 09/988,847 Confirmation No.: 9377**  
**Applicant(s) : Daniel E. Resasco, Boonyarach Kitiyanan,**  
**Jeffrey H. Harwell and Walter Alvarez**  
**Filed : 11/19/2001**  
**TC/A.U. : 1754**  
**Examiner : S. Hendrickson**  
**Title : METALLIC CATALYTIC PARTICLE FOR**  
**PRODUCING SINGLE-WALLED CARBON**  
**NANOTUBES**

**Docket No. : 5820.615**  
**Customer No. : 30589**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT**

**List of Sections Forming Part of This  
Information Disclosure Statement**

The following sections are being submitted for this Information Disclosure Statement:

1. [X] Preliminary Statements
2. [X] FORM PTO-1449 (Modified)
3. [ ] Statement as to Information Not Found in Patents or Publications
4. [X] Copies of Listed Information Items Accompanying this Statement

5820.615 Supplemental IDS.wpd

11/20/2003 ZJU HAR1 00000109 041700 09988847

01 FC:1806

180.00 DA

5.    ☒ Identification of Person(s) Making this Information Disclosure Statement

### **Section 1.           Preliminary Statements**

Applicants submit herewith patents, publications or other information of which they are aware, which they believe may be material to the examination of this application and in respect of which there may be a duty to disclose.

The filing of this information disclosure statement shall not be construed as a representation that a search has been made (37 C.F.R. § 1.97(g)), an admission that the information cited is, or is considered to be, material to patentability or that no other material information exists.

The filing of this information disclosure statement shall not be construed as an admission against interest in any manner. Notice of January 9, 1992, 1135 O.G. 13-25, at 25.

### **Section 2.           Form PTO-1449 (Modified)**

☒ A completed Form 1449 (Modified) is attached hereto.

☐ No Form 1449 (Modified) is attached.

### **Section 3. Statement as to Information Not Found in Patents or Publications (Information Not Listed in Form PTO-1449)**

### **Section 4. Copies of Listed Information Items Accompanying this Statement**

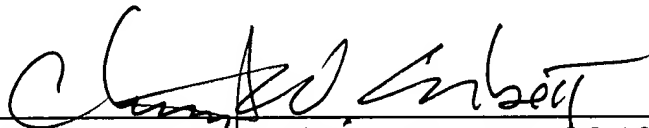
Legible copies of all items listed in Form PTO-1449 (Modified) accompany this information disclosure statement.

**Section 5. Identification of Person(s) Making this INFORMATION DISCLOSURE STATEMENT**

The person making this statement is the attorney who signs below on the basis of the information:

- ☐ supplied by the inventor(s)
- ☐ supplied by an individual associated with the filing and prosecution of this application (37 C.F.R. § 1.56(c)).
- ☐ in the attorney's file
- ☒ provided in the International Search Report cited herein

Respectfully submitted,



Christopher W. Corbett, Reg. No. 36,109  
DUNLAP, CODDING & ROGERS, P.C.  
P.O. Box 16370  
Oklahoma City, Oklahoma 73113  
(405) 607-8600 - telephone  
(405) 607-8686 - telefax

Agent for Applicant(s)

Express Mail: EL988725766US  
Date Deposited: 11/17/2003



Page 1 of 2

Substitute for form 1449A/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

| Complete if Known      |                          |
|------------------------|--------------------------|
| Application Number     | 09/988,847               |
| Filing Date            | 11/19/2001               |
| First Named Inventor   | Daniel E. Resasco et al. |
| Group Art Unit         | 1754                     |
| Examiner Name          | S. Hendrickson           |
| Attorney Docket Number | 5820.615                 |

(use as many sheets as necessary)

### U. S. PATENT DOCUMENTS

| EXAM<br>INIT. | Cite<br>No. 1 | U.S. PATENT NUMBER<br>Number | Kind<br>Code2<br>(if known) | Name of Patentee or Applicant<br>of Cited Document | Date of Publication of<br>Cited Document MM-<br>DD-YYYY | Pages, Columns, Lines,<br>Where Relevant<br>Passages or Relevant<br>Figures Appear |
|---------------|---------------|------------------------------|-----------------------------|--|---|--|
|               |               |                              |                             |  |   |  |
|               |               |                              |                             |  |   |  |

### FOREIGN PATENT DOCUMENTS

| EXAM<br>INIT. | Cite<br>No. 1 | Foreign Patent Document<br>Kind Code5<br>Office 3<br>Number 4<br>(if known) | Name of Patentee or<br>Applicant of Cited Document | Date of Publication of<br>Cited Document MM-<br>DD-YYYY | Pages, Columns, Lines<br>Lines, Where Relevant<br>Passages or Relevant<br>Figures Appear |
|---------------|---------------|---|--|---|--|
|               |               | PCT/US02/23155  | PCT<br>International<br>Search Report              | 07/21/2003  |  |
|               |               | WO 00/73205 A1  | PCT  | 12/07/2000  |  |
|               |               |   |  |   |  |

### NON PATENT DOCUMENTS

Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published

ALVAREZ, ET AL., "Synergism of Co and Mo in the catalytic production of single-wall carbon nanotubes by decomposition of CO", *Elsevier Science Ltd.*, Carbon 39 (2001), pp. 547-558.

BANDOW ET AL., "Effect of the Growth Temperature on the Diameter Distribution and Chirality of Single-Wall Carbon Nanotubes", *The American Physical Society, Physical Review Letters*, Vol. 80, No. 17, (1998), pp. 3779-3782

| EXAM<br>INIT.  | <p style="text-align: center;"><b>NON PATENT DOCUMENTS</b></p> <p style="text-align: center;">Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published</p> |  |
|--|---|--|
|  |   | CHATURVEDI ET AL., "Properties of pure and sulfided NiMoO <sub>4</sub> and CoMoO <sub>4</sub> catalysts: TPR, XANES and time-resolved XRD studies", Database Accession No. EIX99044490981 XP002246342, Proceedings of the 1997 Mrs Fall Symposium, Boston, MA, USA, December 2-4, 1997; Mater Res Soc Symp Proc, Materials Research Society Symposium-Proceedings, Recent Advances in Catalytic Materials, 1998, Mrs. Warrendale, PA, USA. |
|  |   | DE BOER ET AL., "The cobalt-molybdenum interaction in CoMo/SiO <sub>2</sub> catalysts: A CO-oxidation study", <i>Elsevier Science Ltd.</i> , Solid State Ionics 63-65 (1993), pp. 736-742.   |
|  |   |  |
|  |   |  |
|  |   |  |
|  |   |  |
|  |   |  |
| EXAMINER   |   | DATE CONSIDERED  |
| EXAMINER: Initial if citation considered, whether or not citation is in conformance and not considered. Include copy of this form with next communication to applicant. **Place of Publication refers to name of publication in which the information was published. |   |  |